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Transferring "best practice" road safety measures to a different context: Comments on improving road safety in the Philippines

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1. Introduction

Increasing efforts are being made to apply "best practice" or "good practice" measures to road safety problems in less motorised countries, due to the magnitude and rapid growth of road crashes in these countries associated with rapidly increasing motorisation. This involves the transfer of knowledge and expertise, which has been developed mainly in highly motorised countries, to countries which differ from highly motorised countries in many more respects than their income or their level of motorisation. This paper first outlines the nature of these differences and their impacts in broad terms, based on research conducted as part of ongoing doctoral studies.

Second, following on from Professor Sigua's preceding paper[1], the findings of the research are applied to the road safety situation in the Philippines. It should be noted at the outset that the research conducted so far has not focused specifically on the Philippines, so that the aim is to raise pertinent questions about the broader context of road safety in the Philippines, not to make strong recommendations for implementation of particular measures.

2. A model of the transfer of road safety measures

The discussion in this section draws largely on a previous paper[2] which discussed transfer issues with respect to "less motorised countries", which in the Asian region are essentially the same as the "low and middle income countries" mentioned by Professor

Sigua. While not all highly motorised countries are Western, the road safety orientation in highly motorised non-Western countries tends to share more with Western countries than with less motorised countries in the same non-Western region. For this reason, and because the initial history of motorisation is distinctly Western, references made below to highly motorised countries show a bias toward Western countries.

The application of Western road safety experience to less motorised countries has probably been taking place since motorisation began, with the nature of the transfer process over time reflecting the rise of more systematic and multidisciplinary road safety approaches in highly motorised countries.

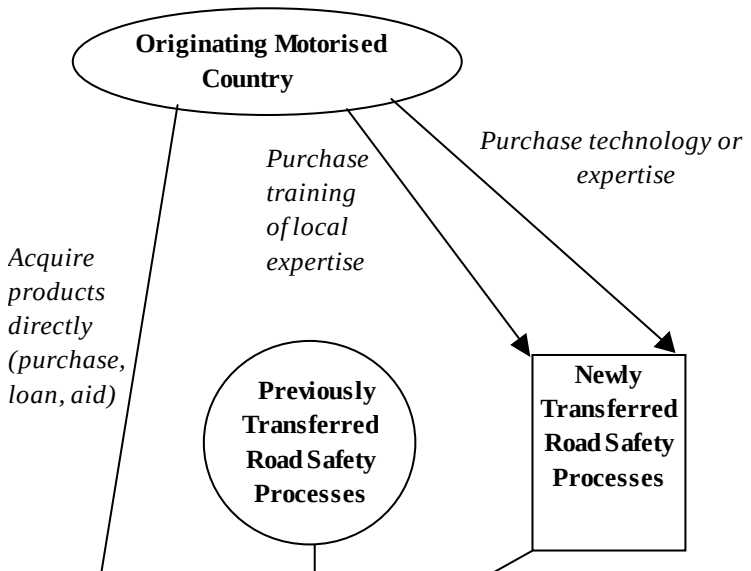
One way of looking at the transfer of road safety measures is to distinguish *products* and *processes*:

- *road safety products,* which include crash barriers, well-designed roads, safe vehicles, well-constructed road safety training packages, effective road safety publicity campaigns (i.e. materials plus media), effective enforcement programs, and effective legal and administrative systems; and
- *road safety processes,* which include the processes and tools used to develop road safety products, e.g. manufacturing technology and standards for crash barriers and safe vehicles, road design standards and traffic engineering practices for safe roads, consultation and market research for training packages and media publicity, systems development, lobbying, advocacy etc.

Ultimately, less motorised countries need road safety products. As Figure 1 shows, transferred road safety products can be:

- acquired directly from highly motorised countries;
- developed by less motorised countries using road safety processes newly acquired from highly motorised countries (through purchase of expertise, or purchase of training in the processes); and/or
- developed with existing local expertise in previously transferred road safety processes.

Figure 1: Diagrammatic representation of the transfer of road safety products and processes to less motorised countries



3. Factors influencing the success of transfer

Several reviews of different aspects of transfer of road safety measures have been carried out as part of this research. Among other things, these reviews show that very few evaluations have been conducted on the effectiveness of transfer efforts in the Asian region. Where evaluations have been conducted, they show that best practice developed in highly motorised countries does not necessarily transfer successfully to less motorised countries, even in the more concrete and focused area of engineering [3]. An analysis of the reasons for these failures suggests that there are three broad categories of factors which influence road safety transfer effectiveness:

- *institutional,* e.g. legislative and decision-making systems, role of police, relationship between central and regional governments, etc.;
- *economic,* e.g. distribution of wealth, relative costs of transport modes, use of development funds for road-building, etc.; and
- *social and cultural,* e.g. social stratification, values, involvement of poorer and disenfranchised people in problem identification and treatment.

With these factors in mind, interviews have been conducted with a number of people involved in road safety transfer efforts in two South East Asian countries. In both cases the main focus has been on a particular road safety program, implemented locally with input from Western and local experts in road safety and related disciplines. However the interviews and discussions have ranged more broadly than the immediate programs, to explore the general road safety situation, previous programs (whether entirely local or involving transfer) and other factors which provide the context for road safety in the country in question. The people interviewed include Western consultants, local representatives of transport, education and health agencies, and representatives of non-government organisations and international agencies. To provide further background, interviews have been conducted with people who have been involved with road safety, health and engineering projects in a number of Asian countries over many years.

These interviews have been supplemented with documents, both popular and official, and observations of road safety in practice in each country.

The research is still in progress, and much remains to be drawn together, hence the following observations are rudimentary and somewhat tentative. It should be noted that the nature of the research means that the focus of the findings varies greatly, from the detail of individual interactions to the broader level of national and even global issues, and across areas of study ranging from technical areas to humanities. As the important part of this paper is the application of the research to the road safety needs of the Philippines, some brief points only will be made, under the categories identified earlier: institutional, economic, and social and cultural factors:

Institutional factors

- there are often weak links between government legislation, departmental priorities and police activities;
- commitment to a program or strategy at the national level may have no bearing on what happens at the local level;
- road safety is multidisciplinary, and some governments are very compartmentalised, such that government agencies do not cooperate well with each other or with non-government bodies;
- the policies and practices of insurers may motivate the non-reporting of crashes;
- unless a road "rule" has the full force of permanent, legislated law, its validity and enforceability are compromised;
- the role of police in less motorised countries is usually not the same as in highly motorised countries, i.e. there may be less respect and a view of police as corrupt and as acting above the law, which may lead in turn to non-reporting of crashes; and
- competing police priorities may preclude intensive road safety activities, e.g. use of police to control the congestion which has also been caused by rapid motorisation.

Economic factors

- where transport infrastructure is funded by international loans, the requirement to repay the loans encourages infrastructure, policies and programs aimed at increasing economic activity, often at the expense of road safety among a number of road user groups;
- in a constrained budget environment, access to relatively large amounts of external funding encourages political behaviour in deciding on how it is spent;
- the relative costs of vehicles, safety equipment, traffic fines, bribes and alternative transport, compared with income, may provide an incentive for illegal and/or unsafe behaviour; and
- some road safety measures require large amounts of resources to establish, and also to maintain, which may be unsupportable relative to other programs.

Social and cultural factors

- all cultures have ways of explaining behaviour and ideas about how to change behaviour, but these have not necessarily been tested and refined, and there may be little or no existing knowledge which can be used to inform behaviour change efforts;
- in addition, knowledge of the most effective media for subgroups is limited;
- in a stratified society, even conducting research on road safety behaviour is very difficult and appears to be rarely carried out;
- in some cultures the negative associations of death and dying interfere with attempts to confront people with the consequences of risky behaviour, or to enlist the assistance of those who have lost somebody; and
- personal relationships and sponsorship by key individuals, rather than government commitment, may be key to the resolution and direction of projects.

4. Applying the research to the road safety problem in the Philippines

As noted earlier, the research carried out thus far has not involved the Philippines, hence the following section will raise issues for consideration and questions for discussion, rather than making definitive statements about the Philippines.

Professor Sigua mentioned a number of factors contributing to the road crash problem in the Philippines. Table J.1 (appended after the Reference section) lists most of these factors in the leftmost column. The central column lists road safety measures which would be considered best practice in highly motorised countries, or at least good practice. In the table best practice measures are identified by two asterisks, and are measures whose effectiveness has been proven. Good practice measures are those which are widely accepted, but about whose effectiveness there is still much debate. The third column raises questions about the context of road safety in the Philippines which might affect the applicability of these best practice and good practice measures.

As a look at Table J.1 shows, the context into which road safety measures are transferred can differ in many ways from the context in the highly motorised countries where best practice and good practice measures evolved. Three key examples from the table which merit separate discussion are:

- the knowledge base and capacity to change attitudes and behaviour;
- use of measures involving enforcement; and
- development of better crash reporting and consequent improved capability for diagnosis and analysis of road safety problems.

Changing attitudes and behaviour

Professor Sigua noted the contribution of attitude and behaviour to the road crash problem in the Philippines. Throughout the world this is perceived as a problem which must be addressed, and a number of approaches are employed, ranging from mass media exhortations to drive safely, to individual intervention through rehabilitation. Evaluations of these approaches yield mixed results. What is important in Asia, however, is the lack of a comprehensive knowledge base on attitude and behaviour change, and the need to build capacity in these areas.

All societies and social groups, and all individuals, have "theories" about why people act the way they do and what can be done to change them. These "theories" are embedded in popular culture, socialisation processes, child-rearing approaches and religion. However, Western countries are distinct in having developed these "theories" into a set of more formal theories of attitude and behaviour which have been subjected to testing and development. This work has not been restricted to behaviours like road safety and health, but includes market research and advertising.

As a result, a knowledge base has been established which classes people into categories with respect to the reasons why they carry out particular behaviours, and what messages, message characteristics and media are likely to influence them. While there are some fixed and predictable components to this (e.g. the ongoing need to address young male high risk behaviour), other components need to change to be effective (e.g. a media message can wear out, and the credibility of particular messages changes). These variable components are also dependent on context. In Australia, for example, which is a very homogeneous country, road safety advertising that is effective in one Australian State may not be effective in another.

In the research carried out so far for the project described in this report, it appears that knowledge bases for attitude and behaviour change need to be much further developed in South East Asia. In concert with this, the capacity to develop and use these knowledge bases needs to be further developed. For reasons which are quite sound, the emphasis on higher education in South East Asia has concentrated on areas which contribute to economic and health advancement, however this has meant that disciplines aimed at developing an understanding of behaviour have not received the attention they deserve. The importance of redressing this imbalance is compounded by the difficulties of conducting research into attitudes and behaviour in societies which are strongly stratified, as is the case in some South East Asian countries. It is not simply a matter of a researcher asking questions, because the relative statuses of the researcher and the subject influence the response.

Measures based on enforcement

In some Western jurisdictions, notably Australia, enforcement techniques form the backbone of road safety measures which have been proven to change behaviour, e.g. random breath testing to deter drink driving and speed cameras to detect and deter speeding offences.

When recommending such enforcement-based approaches as best practice in less motorised countries, it needs to be borne in mind that there are a number of preconditions which determine whether or not these approaches can be implemented effectively:

- the enforcement methods require clear and strong legislative support, and sometimes constitutional support; Australian-style random breath testing has been considered unacceptable in the USA because the random stopping of individuals to require a breath test violates their constitutional rights;
- police need to have the training and ongoing resources to maintain enforcement at sufficient levels; a good program that is implemented at a low level of intensity (or started with a bang and petering out quickly) may be ineffective and even counterproductive;
- some enforcement strategies rely on police doing jobs they find unsatisfying, according to a set formula that is not intended to be changed at the local level; without a strong central administration that can ensure the operation of the program is consistent everywhere, its effectiveness is compromised;

- programs like random breath testing and speed cameras require the purchase, maintenance, calibration and storage of relatively expensive equipment, on top of which the climate in South East Asia is unfriendly to electronic devices; this requires considerable infrastructure and ongoing resourcing, establishment of procedures and responsible officers, and ongoing training;
- police are subject to competing priorities, such as the need to maintain traffic flow in increasingly congested cities, and such immediate and economically related priorities often take precedence over safety duties; and
- if there are loose licensing and registration systems, loose or tedious offence detection and recording systems, and economic incentives on both sides to deal with offences on the spot, without fuss, police are placed at risk of involvement in corrupt practices.

All these issues need to be considered before moving to introduce enforcement-based measures. For example, if there were likely to be pressures on police resources for the foreseeable future, it would be advisable to implement low intensity randomised enforcement techniques which have been proven to be effective, rather than high intensity approaches which may not be sustainable.

Better crash reporting

This issue has been emphasised by Professor Sigua, and the lack of good data is certainly a major barrier to diagnosis of traffic problems, implementation of black spot programs and evaluation of program effectiveness.

However, improvement of crash reporting goes beyond the provision of data systems and training for police. What has emerged in the research is that there are strong incentives for people involved in crashes not to report the crash. One reason, which it must be stressed is still anecdotal at this stage and requires confirmation, is that the constraints and requirements placed on crash reporting by insurance companies provide an incentive for crash participants to come to an arrangement with each other. Similarly, there are incentives not to involve police, in part because of alleged cases of corruption, and in part because some parties in the crash feel they are better off reaching a private arrangement. Given widespread unlicensed driving and use of unregistered vehicles, this is easy to understand.

Data from emergency centres could supplement police reported crash data, or even replace it in some cases, where a particular hospital or network of hospitals have good systems, bearing in mind that this would provide good data in some areas but not in others. However there are other limitations to hospital data. Typically hospital records of injuries from crashes do not have the level of detail about the crash site and circumstances to satisfy the requirements of crash analysis and black spot treatment. In addition, staff need to be trained in classification of causes of death and injury to correctly assign standard injury codes.

5. Discussion and conclusion

The points discussed above, together with consultation of Table J.1, show that the successful transfer of road safety measures from highly motorised countries to less motorised countries like the Philippines depends on institutional, economic, social and cultural factors which are frequently taken for granted in highly motorised countries. This does not constitute an argument against the transfer of road safety measures; rather, it is an argument for a better informed approach to the transfer task. It is also argued that there is a need for the capacity of less motorised countries to deal with road safety attitudes and behaviours to be further developed.

One gap in the research, brought into sharp focus by the nature of Global Road Safety Partnerships, is the success of government-industry partnerships. This is because of a lack of research in this area, and it is to be hoped that Global Road Safety Partnerships projects will provide an opportunity to evaluate both the effectiveness of the approach, and the factors which contribute to success.

In any event, the successful implementation of best practice and good practice road safety measures will most likely depend upon a careful assessment of the context into which the measures are to be introduced, the context in which they were originally found to be successful, and a realistic assessment of the impact that the differences between these contexts will have on successful implementation. Failure to carry out such an assessment could lead to the wasted investment of time, money and goodwill, and could harm the road safety agenda in the long run.

6. References

1. Sigua, R.G. (2002). The State of Road Safety in the Philippines. Paper presented at The 2nd GRSP ASEAN Seminar, Hanoi Vietnam, March 25-27, 2002.
2. King, M.J. (2000). Road Safety in Less Motorised Countries: Potential for, and Limitations of, Transfer of Experiences from Motorised Countries. Proceedings of the Road Safety Research, Policing and Education Conference, Brisbane, November 2000. CARRS-Q/QUT: Brisbane, pp. 137-143.
3. King, M.J. (2000). Engineering for safer road use behaviour in Asia. Traffic and Transportation Studies: Proceedings of the International Conference on Traffic and Transportation Studies 2000, eds. Kelvin C.P. Wang, Guiping Xiao and Jialun Ji. American Society of Civil Engineers: Reston, Virginia, pp. 963-970.

Table J.1: Road safety issues in the Philippines, suggested best practice or good practice, and questions relating to the applicability of these suggested measures to the Philippines

Issues	Best practice (**) or good practice (*)	Applicability of best practice in the Philippines
1. Reckless driver behaviour Attitude rather than technical aspects of driving Deliberate recklessness	A coordinated program of enforcement and education. Education components: • public education (**) • school-based and community-based education (*) • driver education (*) Enforcement components: • randomised enforcement (**) • random breath testing (**) • large scale speed camera program (**) • high perceived risk of detection, moderate penalty applied with certainty (**) • blitzes on special occasions (*)	Effective public education requires an understanding of what information needs to be conveyed, who the target groups are, what messages and media reach them best, and ongoing reinforcement of the message: • does the knowledge base on behaviour and knowledge change exist? • can public education hope to reach target groups where social and cultural factors are a strong influence on behaviour? • are there resources sufficient to maintain an adequate level of public education? • are public education campaigns able to be coordinated with police activity on an ongoing basis? Effective enforcement requires adequate resources deployed consistently and effectively such that drivers are deterred from committing offences: • is it feasible for police resources to be deployed specifically for road safety purposes at a high enough level for long enough? • for technology-based programs, is there adequate storage, maintenance, expertise and training to maintain the programs? • do the public perceive the police as likely to be consistent, fair and committed to traffic enforcement for safety purposes? • is policing organised so that policies and practices are consistent across the country? • are driver licensing, vehicle registration, fleet management and judicial systems at a level which supports police efforts? • is there clarity and consistency in legislation to support police efforts?

Issues	Best practice (**) or good practice (*)	Applicability of best practice in the Philippines
<u>2. Vehicle roadworthiness</u> Poor vehicle maintenance Blowout crashes (fleet vehicles, recapped tyres) Age or mileage of vehicles a potential problem	Establish and enforce safety standards for new vehicles based on international rules (**) Establish and enforce safety standards for in-service vehicles: • annual checks for commercial vehicles (**) • with random enforcement checks (**) • and/or vehicle inspections when used vehicles are bought and sold (*) • or annual inspections for all vehicles (*)	Establishment and enforcement of national safety standards for new vehicles has implications for international trade, domestic production and economic productivity: • are the potential cost impacts on imported vehicles, locally manufactured vehicles and export partners likely to politically and economically acceptable? • is there an inspection and vehicle modification system which is adequately staffed and resourced to enforce the standards? • given the wide range of vehicles available, are national safety standards feasible without eliminating certain vehicle types or vigorously regulating their production, and is this politically and economically acceptable? Establishment and enforcement of safety standards for in-service vehicles has similar implications to standards for new vehicles, but with a more immediate impact on private owners: • are there adequate resources to carry out random inspections at a high enough rate to promote compliance? • is there sufficient infrastructure (mechanics and workshops) to allow older vehicles to be adequately maintained, or to serve as inspection stations? • would the introduction and enforcement of these standards lead to economic hardship among those who are already economically disadvantaged? • would there be significant economic disbenefits and possible loss of services (e.g. reduction in bus fleets, decrease in availability of cheap goods transport) and is this politically acceptable? • could inspection systems (random, on change of ownership or periodic) operate in a fair and consistent way (e.g. extent of likely corruption involving inspection stations)? • given the wide range of vehicle types available, would such a system envisage the eventual phasing out of some vehicle types altogether? • fleet owners would bear a high level of responsibility under this approach – could an effective system of encouragement and enforcement be maintained to ensure the compliance of fleet operators?

Issues	Best practice (**) or good practice (*)	Applicability of best practice in the Philippines
<u>3. Road obstructions and environment safety</u> Stalled vehicles in the roadway Road obstructions caused by construction sites Need for traffic safety devices to warn of hazards	Protocols for removing stalled vehicles, backed by legislation and subject to enforcement (**) Introduction and enforcement of workplace health and safety regulations which ensure the carriageway is kept clear (**) A national program to install and maintain traffic warning signs, which: • meet international standards and practices in terms of design (**) • are installed correctly and do not constitute a risk (**) • are widely understood (**)	Protocols for removal of stalled vehicles: • are there likely to be adequate resources to enforce such protocols? • are vehicle and driver identification systems set up well enough to support enforcement? Establishment and enforcement of workplace health and safety requirements: • are there existing and effective coordinating mechanisms between traffic enforcement and workplace health and safety enforcement? • are enforcement resources and training adequate? • is there political will to enforce workplace health and safety requirements, given potential economic impacts? A national program for installation of traffic signs: • does the organisation of responsibility among national, provincial and local government agencies facilitate or impede such a national program? • will there be sufficient resources? • has research been conducted to see if signs are understood, and to identify target groups for education? • are there funds available for public education if required?
<u>4. Other issues</u> Lack of data on traffic crashes	Implement a comprehensive police traffic reporting system with the following features: • compulsory reporting of certain crash classes based on severity (**) • including location and circumstances data of use to traffic engineers and researchers (**) • a computerised database with data validation and cleaning (**) • preferably drawing data from computerised reports generated in police stations (*) • coordination and cross-validation with hospital records (*)	A crash reporting system which enables informative analysis and evaluation needs to capture most relevant crashes consistently: • are there reasons why people choose not to report crashes, and can these reasons be addressed sufficiently to ensure that most reportable crashes are reported? • are there sufficient police resources, training and infrastructure to support crash reporting, whether computerised at station level or not? • is it possible to ensure national consistency in police crash reporting? • is there adequate information and training to enable police to enter crash location and circumstances data? • is there a single hospital reporting system, or multiple systems which need to be coordinated?